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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/558,893	10/13/2006	Michael Huth	2003P06127W0US	6326
22116 7590 11/23/2010 SIEMENS CORPORATION INTELLECTUAL PROPERTY DEPARTMENT 170 WOOD AVENUE SOUTH ISELIN, NJ 08830			EXAMINER SUNG, GERALD LUTHER	
			ART UNIT	PAPER NUMBER
			3741	
			MAIL DATE	DELIVERY MODE
			11/23/2010	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/558,893

**Applicant(s)**

HUTH ET AL.

**Examiner**

GERALD L. SUNG

**Art Unit**

3741

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/22)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

**DETAILED ACTION**

1. This is a final office action in response to the arguments and amendments filed on 17 September 2010.

***Response to Arguments***

2. Initially, the Examiner notes that the Applicant has adopted claim language included in the previous office action filed 23 June 2010. The Examiner notes that in suggesting the claim language "a plane that is (substantially) parallel to and encompasses said combustion chamber wall," it is well understood that the combustion chamber walls, like the Applicant's, are annular in shape and that it is mathematically incorrect to have a plane parallel to a curved surface. Therefore, the term "substantially" was suggested so as convey the spirit that an imaginary "plane" embodies points that are parallel to all points of the combustion chamber wall. The language suggested was explicitly noted as "for example only," to convey to the Applicant that such language was used to convey the spirit of the subject matter that would distinguish the claims and not the actual language itself. The Applicant must adhere to all requirements set for in 35 U.S.C. 112 and should carefully review the application prior to adopting claim language expressly indicated as "for example only." Moreover, the Examiner notes that such language was solely intended to address issues arising from the Senior reference and not, as the Applicant contends, any other rejection or reference pertinent to the claims.

3. In adopting the suggested claim language, the Examiner affirms the contention that the Senior reference is no longer relevant. Therefore, the arguments pertaining to Senior are now moot.

4. Regarding the Applicant's arguments directed at the Beebe reference, the Examiner respectfully disagrees with all arguments presented. The Applicant insists upon using such broad language as "a flow element" modified by functional language to achieve the claimed function. However, "a flow element" imparts little structure other than that capable of "selective adjustment" of a cooling flow. Applicant makes no contention that the flow sleeve 26 is not a "flow element" capable of "selective adjustment" of the cooling medium. First, the Examiner maintains that the flow sleeve 26 is a "flow element" with a longer side that is adjacent and in contact with a combustion chamber wall such that the longer side is defined by a plane that is substantially parallel to and encompasses the combustion chamber wall (clearly shown in figure 1). The Examiner further notes, as the Applicant is aware, that "[d]rawings and pictures can anticipate claims if they clearly show the structure which is claimed." *In re Mraz*, 455 F.2d 1069, 173 USPQ 25 (CCPA 1972). Referring to figure 1, the drawings expressly show a flow element 26. In relying on the flow sleeve 26 as a structure capable of "selectively adjusting" the flow of cooling medium, the Examiner relies on conservation of mass principles. It is the geometry of the flow sleeve 26 that gives the flow sleeve the inherent properties of "selectively adjusting" the cooling medium. In conserving mass, the Examiner concedes that air is not an incompressible fluid; however, no contention directed to the changes in density affecting the fluid flow has been presented. Thus, assuming change in mass flow rate equals zero, the product of the velocity, cross sectional area and density at state 1 are equal to the product of the velocity, cross sectional area and density at state 2. It follows that a change in cross

sectional area at state 2 would yield a change in velocity at state 2 when compared to state 1. Applicant has failed to present evidence as to why the analysis is flawed. Furthermore, the Examiner notes the striking similarities between Beebe's figure 1 and the Applicant's disclosed invention. Thus, by presuming the Applicant's structure achieves the claimed function, the Examiner is free to presume Beebe's identical structure achieves the claimed function. It is unclear why the Applicant believes that such a reliance on the Beebe structure is unsupported or unexplained in light of the fact the Examiner explicitly indicated the Beebe structure achieves the claimed function through the principle of conservation of mass. Therefore, the Examiner believes, that on the preponderance of the evidence, the Beebe reference discloses the claimed structure where the burden is on the Applicant to explain why such a structure is incapable of achieving the claimed functions. Mere conclusory statements will not preclude the Beebe reference.

5. Should the Applicant still require further explanation of the rejection below or the contents of this office action, the Applicant is invited to contact the Examiner at the undersigned number.

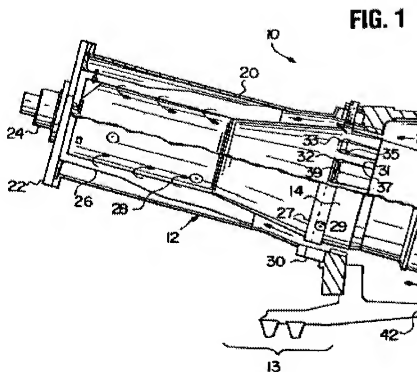
***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 10-13 and 19-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Beebe et al. US 5,826,429.



8. Regarding claims 10-13, 19-26, Beebe discloses a combustion chamber wall 20, a liner formed from a plurality of heat shields 28 on a radial inside of the combustion chamber wall, an inner space formed between the heat shield elements and the combustion chamber wall and exposed to a cooling medium (air), a flow element 26 ('sleeve') arranged in the inner space capable of selective adjustment of a cooling medium stream, the flow element arranged on the combustion chamber wall, wherein the longest side of the flow element is adjacent to and in contact with the combustion chamber wall such that the longest side of the flow element is defined by a plane that is substantially parallel to and encompasses the combustion chamber wall. Conserving

mass dictates the flow element will cause an increase in the velocity of the cooling air when compared to the downstream velocity, at least in the incompressible regime. As discussed in the response to arguments, the flow element increases the velocity because of its geometry. The heat shield at the head of the combustor is interpreted as being "assigned" to the flow element 26 and will inherently have a higher cooling efficiency than without the flow element. The heat shield 28 is annular and is curved with respect to both the longitudinal axis of the combustor and the transverse axis of the combustor. The surface of the flow element is located near a cold side of the heat shield so as to reduce the flow channel width and a portion of the flow element surface matches the contour of the heat shield element. The flow element 26 has a rectangular shaped portion at the head of the combustor where the longer side forms a portion of the surface and an approximately triangular shaped portion upstream of the rectangular portion.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
11. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beebe and Senior.
12. Regarding claims 15-18, Beebe discloses all elements but does not explicitly disclose the manner in which the flow element 26 is attached to the combustion chamber wall or the material composition of the flow element.
13. The use of welding and sheet metal components are well known in the field of gas turbine engines as shown by Senior. Combustors typically use various metals, metal alloys, or ceramics to form walls so as to withstand the high temperatures and pressures within the combustor. Welding offers a simple strong means of attaching structures with gas turbines.
14. One of ordinary skill in the art at the time of the invention would have found it obvious to weld a sheet metal flow element 26 to the combustor wall as a means of mounting the flow element to the wall of Beebe as taught by Senior in order to provide a durable effective means of mounting the flow element. Furthermore, as noted above, welds are reversible and therefore the flow element is detachably mounted.

### ***Conclusion***

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within



TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERALD L. SUNG whose telephone number is (571)270-3765. The examiner can normally be reached on M-F 9am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cuff can be reached on (571) 272-6778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit: 3741

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Gerald Sung  
Patent Examiner  
GS  
11 November 2010

/Michael Cuff/  
Supervisory Patent Examiner, Art Unit 3741